steganographically decoding a message from the image, the message including printer control information related to at least one physical characteristic of the print media; and

using the printer control information to adapt operation of the printer.

REMARKS

Claims 1-16 are pending in the present application.

Claims 1-6 stand rejected under 35 U.S.C. § 101 as allegedly being directed to non-statutory subject matter. Applicant respectfully traverses this rejection.

Claims 1-3 stand rejected as being anticipated by Gasper, et al. (U.S. Patent No. 5,752,152 -- hereafter referred to as "Gasper").

Claims 4-14 stand rejected as being unpatentable over Gasper in view of Zhao et al. (U.S. Patent No. 6,243,480 B1 -- hereafter referred to as "Zhao").

The specification has been amended herein to correct minor informalities. And claims 1, 7 and 13 have been amended to provide even further clarification of the claimed invention. Claims 15 and 16 are newly presented herein. No new matter has been added by these amendments.

Interview Summary

Applicant's undersigned representative, Steve Stewart, expresses appreciation for the courtesies extended by Examiner Johns during the personal interview conducted on December 5, 2001. The resulting Interview Summary Form (PTO-413) is herein incorporated by reference.

Claims 1, 7 and 13 have been amended as agreed to during the interview.

Statutory Subject Mater

Applicant appreciates the indication that claims 1-6 recite subject matter that is clearly statutory and that the above-mentioned 35 U.S.C. § 101 rejection will be withdrawn. (See the incorporated Interview Summary Form.) Such action is respectfully requested.

Claim1 in view of Gasper

The cited passages of Gasper teach that, if the spacing of microdots is detected to be different than Px and Py (see Gasper's Fig. 1) by a constant scaling factor, then an algorithm in a copier determines *if the image in the document* on the platen has been *magnified or demagnified*. (See Gasper at Col. 13, lines 14-18, *emphasis added*). If the copier determines that the *image has been magnified from its original size*, the copier may employ *an image enhancement algorithm to improve* the sharpness or acutance *of the copied image*. (See Gasper at Col. 13, lines 18-21, *emphasis added*).

Accordingly, applicant respectfully submits that Gasper fails to teach a paper medium carrying a steganographic message, the steganographic message including printer control information *related to the paper medium* that is readable by a machine from an image captured of at least a portion of the paper medium, and that is operable to control a printer *so as to optimize print quality for physical characteristics of the paper medium*, as recited by amended claim 1.

Accordingly, applicant respectfully requests that the rejection of claim 1 be withdrawn.

Claims 2 and 3 should be allowed for at least the reasons noted above with respect to claim 1. Similarly, Zhao fails to remedy the deficiencies of Gasper with respect to claims 4-6. Applicant respectfully requests that these claims be allowed as well.

Claim 7 in view of Gasper and Zhao

Gasper is relied on in the proposed combination with Zhao to teach printer information and using the information to optimize the printer operation for the print media (see the Office Action on page 5, lines 11-12, citing Gasper at Col. 13, lines 18-20). Gasper at Col. 13, lines 14-21, is discussed above with respect to claim 1.

Applicant submits, however, that Gasper fails to teach or suggest at least a printer control unit in communication with a decoder for receiving printer control information and *using the information to optimize printer operation for physical characteristics of print media*, as recited by amended claim 7. Zhao fails to remedy at least this deficiency.

Applicant respectfully requests that the rejection of claim 7 be withdrawn.

Claims 8-12 should be allowed for at least the reasons noted above with respect to claim 7.

Claim 13 in view of Gasper and Zhao

Claim 13 stands rejected for reasons similar to those presented above with respect to claim 7. Applicant notes that amended claim 13 recites a method for adapting operation of a printer to a type of print media comprising, among other steps, using printer control information *to adapt operation of the printer according to the physical characteristics of the print media.*

Applicant respectfully submits that Gasper and Zhao fail to teach or suggest at least such a using printer control information step. Accordingly, applicant respectfully submits that claim 13 should be allowed over the cited art.

Claim 14 should be allowed for at least these reasons as well.

New Claims 15 and 16

New independent claims 15 and 16 are generally modeled after claims 1 and 13, respectively. Applicant submits that new claims 15 and 16 are also allowable over Gasper and Zhao.

Claim 15 recites a paper medium including a steganographic message. The message includes printer control information related to at least one physical characteristic of the paper medium. The printer control information is readable by a machine from an image captured of at least a portion of the paper medium, and the printer control information is operable to control a printer so as to optimize print quality for the at least one physical characteristic of the paper medium.

Claim 16 recites a method for adapting operation of a printer to a type of print media. The method recites steps of steganographically decoding a message from an image, the message including printer control information related to at least one physical characteristic of the print media; and using the printer control information to adapt operation of the printer.

Respectfully, new claims 14 and 15 should also be allowed over Gasper and Zhao.

Information Disclosure Statement

An Information Disclosure Statement and Form 1449 are submitted concurrently herewith, along with a deposit account authorization to cover the appropriate fee. Consideration of the documents cited in the IDS is respectfully requested.

Conclusion

Withdrawal of the above-noted rejections and early passage to issuance are respectfully requested in view of the above amendments and remarks. (Applicant does not belabor other shortcomings of the art herein.).

The Examiner is invited to telephone the undersigned at 503-495-4575 if any issue remains.

Date: December 18, 2001

Respectfully submitted,

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23735
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Attachments: Marked-up Claims 1, 7 and 13
Marked-up Paragraphs

Marked-up Claims 1, 7 and 13

1. (Amended) A paper medium carrying a steganographic message, the steganographic message including printer control information related to the paper medium that is readable by a machine from an image captured of at least a portion of the paper medium, and that is operable to control a printer so as to optimize print quality for physical characteristics of the paper medium.

7. (Amended) A printer system comprising:

an image sensor for capturing an image of print media;

a steganographic decoder for reading a steganographic [steganoraphic] message from the image of the print media, the message including printer control information for optimizing printer operation for the print media; and

a printer control unit in communication with the decoder for receiving the printer control information and using the information to optimize printer operation for physical characteristics of the print media.

13. (Amended) A method for adapting operation of a printer to a type of print media comprising:

capturing an image of at least a portion of a print media;

steganographically decoding a message from the image, including printer control information; and

using the printer control information to adapt operation of the printer according to physical characteristics of the [type of] print media.

Marked-up Paragraphs

*The paragraph on page 4, lines 19-25:

In the system depicted in Fig. 1, the printer architecture has an image sensor 102 [sensor102] to capture an image of the watermarked print media. As discussed below, the image sensor may be an integrated component of a product with a printer subsystem or a separate component of a computer system attached to a printer. The image sensor transfers the image to a memory device. Depending on the implementation, this transfer may encompass one or more intermediate stages where portions of the image are temporarily buffered, transformed (e.g., color conversion), compressed, and uncompressed.

*The paragraph spanning page 6, line 22, to page 7, line 2:

Operating on the image data, the watermark decoder detects the watermark, reads the message from it, and transfers the printer control information in the message to the printer control unit. [unit..] The printer control unit uses the printer control information as an index in a table to look up corresponding operating parameters. These operating parameters are associated with control signals. The printer control unit issues these control signals to the print mechanism. The print mechanism includes a print head and cartridge that allows for the control of ink drops per a given dot location on the page. Based on the absorption properties of the paper, as conveyed in the watermark, the printer control unit sends a control signal to the printer cartridge that specifies the number of drops to be emitted per dot.